DARLING, FRANK [= Darling and Pearson, Architects] November 1918, June 1919

(003)

November 23rd, 1918

Frank Darling, Esq.,

Leader Lane,

Toronto.

Dear Mr. Darling:

Sir Edmund Walker and I are to see the Minister of Education about buildings on Monday. Would you please let the bearer have plans for the Electrical Engineering Building and any others of proposed buildings that you may have ?

With kind regards,

I am,

Yours sincerely,

President.

May 30, 1919.

President Sir Robert Falconer,

University of Toronto.

Dear Sir:-

RE ENGINEERING BUILDING.

Herewith please find blue prints submitted by Darling and Pearson for remark by the departments concerned.

Also please find a copy of notes on 23 different points, including explanation of markings on the prints. If our suggestions have your approval, it is intended that the marked blue prints and letter of explanation should be forwarded at once to Darling and Pearson.

Items (2), (10), (23) involve questions of policy in which we are vitally interested, and on which we would value definite approval.

Very truly yours,

Y. R. R.

University of Toronto
TORONTO, CANADA

DEPARTMENT OF ELECTRICAL ENGINEERING

313

May 27/19.

President Sir Robert Falconer,
University of Toronto.

Dear Sir:-

RE BUILDING FOR ELECTRICAL ENGINEERING
- and -
STRENGTH OF MATERIALS.

These remarks refer to accompanying blue prints from Darling and Pearson, bearing their production date April 19/19, and our date May 27/19. The prints were furnished by the architect for our information, and as a basis for suggestions regarding essentials from our points of view.

Suggestions and alterations are listed as follows:-

1. Floor names For convenience in offering the following explanations we have named the floors on the blue prints as we are accustomed to name them in the Mining and Engineering Buildings:- Basement, Ground or First Floor, Second Floor, Third Floor.

2. Width of West Section Previous prints from the architect showed an inside width of 26' 0" clear. The present print is not dimensioned, but by scale shows inside width reduced to 24' 4".

This width must be not less than 26' 0" clear from straight wall on west to straight wall on east side of the "Alternating Current Laboratory". Profs. Rosebrugh and Price much prefer a width of 28 to 30 ft., but to meet Mr. Darling's difficulty of fitting into present buildings accepted 26' 0" without remark. The further cut to 24' 4" will entirely spoil our main laboratory, the "Alternating Current Laboratory". We have attempted several different plans of arranging

machinery, test tables, portable apparatus, and parties of students, and conclude definitely that 25' 0" is the minimum permissible clear width. If it be a question of first cost, we maintain that an essential working width must be a first requisite as over against a slight alteration in cost to obtain it.

The width 24' 4" of the east section is not questioned at all.

3. Lavatories (a) Mens' lavatory on third floor, to serve students working on third and second floors, preferably 2 basins, 2 urinals, 2 closets.

Ladies lavatory on second floor, with suitable appointments for stenographer and a few lady students, also women cleaners.

Staff lavatory on ground floor, to serve staff on all floors.

Mens' lavatory in basement to serve students working on basement and ground floors, preferably with 2 basins, 4 urinals, 5 closets

The above gives men students a total of 6 urinals and 7 closets which our experience in the old Engineering building leads us to believe will be ample. This appears reasonable because our men, in moving from building to building will have use also of lavatories in the mining, thermo, and old engineering buildings.

4. Caretaker The basement unit nearest the south and front entrances, and the elevator, has been vacated by the laboratories to provide convenient space with daylight. We are advised by the Superintendent's Department that the unit should be divided into three rooms, one with daylight for the caretaker and a man as assistant if necessary, one with daylight for women assistants, one with or without daylight for caretaker's stores.

5. Basins and Sinks To avoid unnecessary expense, the minimum number consistent with essential requirements has been listed.

Sinks, 10 on third floor, 15 on second, 19 on ground, and 23 in basement, 30" with backs, all on one vent and one drain. Dilute acid may at any time be poured into 10 and 23, but always with thorough flushing. Cold water only.

Sinks 2, 3, 4, 5, 6, 7, 8, 9 on 3rd floor; and 13, 14 on 2nd floor; and 18 on ground floor; and 21, 22 in basement, 30" with backs can be grouped as to vents and drains. Cold water only.

Sinks 1 on third floor; 11, 12 on 2nd floor; 16, 17 on ground floor; and 20 in basement; 30" with backs, all can be drained and vented conveniently from the vertical system of lavatories. Cold water only - except No. 12 in the shop, which requires hot and cold.

Sinks 24, 25, 26, 27 in basement, and probably another in caretakers room must also be provided.

6. Floor Traps In the concrete room in basement annex a special combination of floor drain and accessible trap are necessary for catching and clearing out cement leavings, found necessary to avoid clogging drains. Find sketch herewith, marked "Sketch A".

Standard flush floor traps, suitable for hosing floors, in basement in cement lab., roadways lab., asphalt lab., battery room, battery stores; and in creosote, stores, and crusher rooms in annex.

7. Special Stairs To relieve constant travelling of staff to main end stairs, two one-storey helical stairs, 5 ft. diameter, one from basement to drawing room on ground floor for staff of Applied Mechanics, and one from calibration room on ground floor to calibration room 2nd floor, for staff in Electrical Engineering.

8. Overhead Trolley The trolley in the basement is for the use of a light chain hoist and should be designed for 1000 lbs. load. In the general testing laboratory it may be suspended from the line of secondary

concrete beams nearest the east wall of the building. For radius of curvature for curving trolley track, method of suspension, etc. see the Morris Crane Co's catalogue.

9. Cranes To avoid expense and poor appearance of cranes over the alternating-current and direct-current laboratories, we prefer that the elevator should run to the roof. We can then run from the roof to any laboratory on any floor a portable crane on wheels to do moving as required. (See also pars. 10 and 23)

The above choice is strongly influenced by further certainty that considerable heavy wireless apparatus will from time to time have to be moved up to and down from the roof.

10. Elevator To be a variable spud outfit, 40 ft. per min. with capacity load of 6000 lbs., and 100 ft. per min. for light trucking and passenger service which will be required 95% of all trips.

Specifications of equipment and protection suitable for this elevator will follow.

To have sheltered exit on roof (See 9 and 23)

11. Chutes to Basement Annex These may be in the low side wall similar to a coal chute. They should be 3 in number and are for receiving crushed stone, sand, etc.

12. Opening in lecture room floor above testing machine The testing machine has an overall height of 20' 4". The well above it is to be 5' wide in the clear, and is to be spanned by a small I-beam crane capable of lifting the largest casting in the machine viz. 5000 lbs. Since it may be necessary at times to remove the large upright screws, movable floor panels in the seat bank about 5' X 5' in area should be provided. Upon these, ordinarily, the seats in the lecture room above will rest.

13. Wide Eastern Entrance to Basement This should be in the centre of the east wall, should be 11' 6" wide with double window doors and is intended for receiving occasional shipments of large machines. The pavement for the fronting roadway should be shaped toward this entrance, to facilitate deliveries.

Spiral Stair This should be 5 ft. in diameter and is intended to facilitate movement between the basement testing laboratory and the ground floor. The upper entrance should be south.

14. Wireless Aerial See 3rd floor plan. In red-circle-and-cross marks at N. and S. ends are shown locations of bearing points of two-steel-pipe aerial masts. These will be set up and guyed by light cable from necessary points on roof.

15. Doors Moving of bulky apparatus from room to room at times makes necessary 4 ft. doors in most places. Elevator doors and some others near them are 6 ft. to allow for boxing and tackle.

The general appearance of Mr. Darling's design and coloring of doors in the Physics Building is very pleasing, and we think suit this building.

16. Partitions are marked in the plan. When they are marked "wood", 2 X 4 studding with 7/8 facing on both sides, stained to match doors, is meant. Two finished sides are necessary as both sides are used for purposes requiring wall area.

In offices Office style finishing is desired in all wall in these two sections on ground floor, having good appearance, wood panels to extend about 4 to 5 ft. from floor, translucent (say stripped) glass up to say 8 ft., clear glass above that to ceiling. This will

allow free cross-lighting for librarian; and sufficient for records and stores rooms.

17. Windows. Where height of window sill on inside of laboratory rooms affects working conditions, height from finished floor is marked on prints.

High windows in battery room 3rd floor, calibration room 2nd floor, and calibration room ground floor, are to have sills about 6 ft. above finished floor to leave working space on walls below them.

18. Floors. The only reasons for suggesting wood finish on floors were two:- (1) Concrete and hard tile are very tiring. (2) Wood can be fastened to easily. We prefer some semi-elastic brownish facing material of the type selected by Mr. Darling, provided (1) a nail can be driven into it, (2) an injured spot can be filled properly.

19. Trenches for Wires. These are required as follows:-

In Alternating Current Laboratory, ground floor, on both sides and north end.

In Direct Current Laboratory, second floor, on both sides and at north end.

In Instrument Laboratory, third floor, at north end only.

Blue prints herewith show requirements in each laboratory.

Note that 6" clear to wall is left for piping.

20. Exposed Piping. Mr. Darling wishes to have all piping for water, steam, and electricity in the open. In arranging the above trenches we have kept all steel 6" clear from the walls to permit wall radiators and their piping as Mr. Darling wishes.

21. Wall Holes for Conductors. This suggestion of Mr. Darling's

is excellent. We shall later specify locations of a liberal equipment of these conveniences for crossing halls, between rooms, and between floors.

22. Radiators When the time comes for locating necessary radiators, please consult us as to locations, because some situations may conflict with experimental necessities.

23. Elevator and stair to roof For three reasons we require the elevator to have its driving machinery and a local exit on the roof.

(a) Considerable heavy wireless apparatus will from time to time have to be moved from the various laboratories to the roof, and later returned to the laboratories.

(b) The electrical machinery of the elevator should be available as electrical laboratory equipment for studies on motor characteristics, control devices, acceleration of loads, regenerative braking, etc. For this reason the machinery must not be placed in some out-of-reach location, but on the roof floor to one side of the shaft, with bricked in space around it suitable for a party of students to work in winter weather. If advantage is not taken of this opportunity on elevator machinery, the University will later have to purchase much more expensive substitute apparatus for the laboratories.

(c) We have withdrawn our request for travelling cranes in the alternating and direct current laboratories, assuming that it would be better to use portable crane apparatus, provided we could use the elevator to put the clumsy bulky apparatus in a place on the roof when not wanted, and easily move it to any floor when required.

Stair at north end to roof is essential as a thoroughfare between the Wireless and Communication laboratories on the upper floor north end and apparatus in operation on the roof.

Peter Gilespie
H C Price

the request for travelling cranes in two of the laboratories. They are sending the plans to you with their requests marked. I hope that you will be able to meet their requests in regard to these matters.

With kind regards, I am,

Yours sincerely,

President.

FRANK DARLING JOHN A. PEARSON

DARLING AND PEARSON
ARCHITECTS
TORONTO

31

June 4th, 1919.

Dear Sir Robert:

I have your letter of June 2nd which was given to me by Professor Rosebrugh together with a copy of the matters he wished attended to in the new building for electrical engineering.

I found no difficulty in complying with all his requests, though I am not quite satisfied that the additional 18 inches in width of the big engineering laboratory is absolutely essential. They put up such a strong fight and were so definite in their opinion that I thought it wiser to agree with them without further argument, as it would be unfortunate if later on it was found that their work suffered even to a very slight extent by reason of the lack of width of the room against which they had protested.

My opposition was not factious but by reason that the moving out of the walls to the west interfered with the entrance to the engine room of the Thermo Dynamics Building as well as lapping over into the coal storage and necessitated the moving of certain large supplies and returns of the heating system in the Mining building, not very serious matters in themselves but adding quite a fair amount of money to the cost.

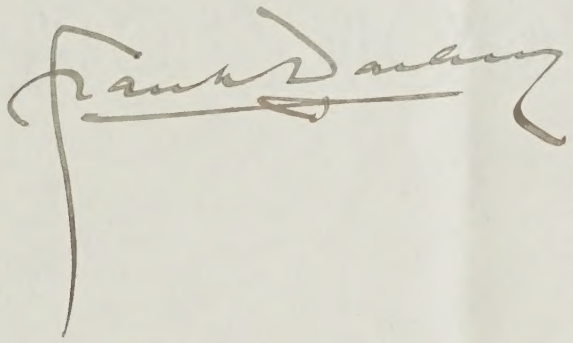
Regarding items 10 and 23 relative to the elevator; The suggestions are good and really effect nothing except the details which we are taking up with the elevator contractors.

 June 4th, 1919.

The other items are matters of no great moment but quite worthy of consideration and I have already attended to them.

FD/H

Yours truly,



Sir Robert Falconer,
President,
University of Toronto,
Toronto, Can.